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<b>PRE-APPEAL BRIEF REQUEST FOR REVIEW</b>		Docket Number (Optional) P03002US1A; 295620-214153	
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]  on _____  Signature _____  Typed or printed name _____		Application Number <b>10/791,049</b>	Filed <b>March 2, 2004</b>
		First Named Inventor <b>Wang et al.</b>	
		Art Unit <b>1796</b>	Examiner <b>Olga Asinovsky</b>
Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.   This request is being filed with a notice of appeal.   The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.			
I am the <input type="checkbox"/> applicant/inventor. <input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/98) <input checked="" type="checkbox"/> attorney or agent of record. Registration number <b>56,218</b>		 Signature <b>Nathan T. Lewis</b> Typed or printed name <b>(216) 586-7078</b> Telephone number <b>August 18, 2008</b> Date	
<input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____			
NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.			
<input type="checkbox"/> *Total of _____ forms are submitted.			

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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## ARGUMENTS

### **I. The 35 U.S.C. § 103 Rejection of Claim 10 and its Dependent Claims Fails to Make a *Prima Facie* Case of Obviousness and is Clearly Erroneous**

In the Final Office Action and the Advisory Action, claims 10-17, 23-25, 27-31 and 34-35 were rejected under 35 U.S.C. § 103 over U.S. Pat. No. 6,437,050 to Krom or EP 0265142 (EP '142) in view of U.S. 6,737,486 to Wang.

The references cited in the Final Office Action do not disclose mono-block polymer chains as part of the nanoparticle, as is required by independent claim 10. In an attempt to find this element in the references of record, the Final Office Action points to a brief disclosure at column 3, lines 16-19 of Krom of an optional step of adding additional monomer to the polymerization mixture after micelles have formed. As discussed below, this rejection fails to make a *prima facie* case of obviousness and it is clearly erroneous in light of Applicant's rebuttal evidence and arguments.

#### **A. The Final Office Action and Advisory Action Fail to Make a *Prima Facie* Case of Obviousness Against Claim 10**

Without any further support, the Office Action summarily concludes that Krom's brief mention at column 3, lines 16-19 of adding additional monomer results in the monomer polymerizing and being incorporated into the nanoparticle as a monoblock polymer. This does not happen (as explained in the Declaration filed on July 21, 2008), and the allegation is merely unsupported conjecture. Such allegations on chemical theories cannot be made without support. See MPEP § 2144.03(A) ("assertions of technical facts in the areas of esoteric technology or specific knowledge of the prior art must always be supported by citation to some reference work recognized as standard in the pertinent art. *In re Ahlert*, 424 F.2d at 1091, 165 USPQ at 420-21.

See also *In re Grose*, 592 F.2d 1161, 1167-68, 201 USPQ 57, 63 (CCPA 1979) (“[W]hen the PTO seeks to rely upon a chemical theory, in establishing a *prima facie* case of obviousness, it must provide evidentiary support for the existence and meaning of that theory.”).” According to the MPEP and case law, the Final Office Action does not even make a *prima facie* case of obviousness.

**B. The Advisory Action is Clearly Erroneous in Failing to Properly Consider the Applicants 132 Declaration.**

In addition to the lack of a *prima facie* case, Applicants have soundly rebutted the unsupported allegation of the Final Office Action with a Rule 1.132 Declaration from two Ph.D. research scientists<sup>1</sup> that is further supported by a well-known and respected text on the subject. This Declaration clearly refutes the Examiner’s position that Krom’s disclosure at column 3, lines 16-19 can be interpreted to disclose or suggest the formation of monoblock polymer chains in the nanoparticle.

The Advisory Action attempts to show Applicants Declaration is deficient by stating:

Inventors disclose that ‘Even if the living polymerization is not terminated before the additional monomer is added, the added monomer would only add on to the living end of the existing diblock polymer chains in the nanoparticles.’ There is no statement that said additional extended polymer chain is not a monoblock polymer chain. The elected claimed invention is a composition.

There are three clear errors in this statement. First, the Declaration states clearly that “while Krom at column 3, lines 16-19, discloses that ‘additional conjugated-diene monomer and/or vinyl-substituted aromatic hydrocarbon monomer can be added to the polymerization mixture as desired,’ this addition would not result in a mono-block polymer becoming part of the nanoparticle.” The Declaration also states: “the Krom patent would not teach or suggest to one of ordinary skill in the art a nanoparticle with both diblock and monoblock polymer chains.”

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<sup>1</sup> Both Dr. Wang and Dr. Pawlow are employed by the owner of this application.  
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Both statements clearly and unambiguously make the point that the monomer addition disclosed in Krom does not make a monoblock polymer chain in the nanoparticle.

Second, the quoted statement itself precludes the interpretation that the additional extended polymer chain could be a monoblock polymer chain. If an additional monomer is added to an existing diblock polymer, either it will form a tri-block polymer or a longer diblock polymer, depending on whether the new monomer is of the same species as the living end. The additional monomer cannot by definition form a monoblock polymer chain if it is added onto a polymer chain that is already a diblock.

Third, the Examiner's statement that "[t]he elected claimed invention is a composition," is true. Yet the reference merely discloses a step of adding monomer, and the reference does not disclose that it causes a monoblock polymer chain to develop in a nanoparticle composition. It is the Examiner who raised the unsupported allegation that the step of adding additional monomer would create the monoblock polymer chain required by the composition claims. There is nothing improper with Applicants addressing the issue that the Examiner raised.

## **II. The 35 U.S.C. § 103 Rejections of Independent Claims 10 and 24 and Their Dependent Claims Fail to Make a *Prima Facie* Case of Obviousness and are Clearly Erroneous**

The rejections of independent claims 10 and 24 fail to make a *prima facie* case of obviousness and are clearly erroneous in that the rejections attempt to combine the nanoparticles of Krom or EP '142 with the disclosed polydispersity of polymers created with a novel initiating system of clay and organic halides or organic sulfur disclosed in Wang '486.

### **A. The Rejections of Independent Claims 10 and 24 are Clearly Erroneous**

The Final Office Action correctly notes that neither Krom nor EP '142 discloses the polydispersity index of about 1.5 to 10, but cites to Wang '486 as disclosing this element.

However, the aforementioned Declaration clearly explains that modifying either Krom or EP '142 with the disclosure of Wang '486 would not produce the polydispersity required by the claims. Wang '486 relates to controlling polydispersity in polymers with a novel initiating system. In contrast, the nanoparticles of the claims are not simple polymers. As previously argued, this ineffectiveness to produce the polydispersity required by the claims would be expected since Wang '486 discloses a completely different type of composition than what is disclosed in Krom and EP '142. Wang '486 describes a layered material, but this is not a core-shell polymer layered material—it is an *inorganic, clay* material. See Wang '486 column 7, line 41 – column 8, line 41. The Examiner has not provided any reasoning as to how the system of Wang '486 could be combined with or modified by one of skill in the art to control polydispersity in nanoparticle compositions such as those disclosed in the references. Thus, it is clear error to continue to apply this combination of references in light of the evidence presented against the effects of their combination.

**B. The Final Office Action and Advisory Action Fail to Make a *Prima Facie* Case of Obviousness Against Claims 10 and 24**

The Final Office Action fails to make a *prima facie* case of obviousness due to a lack of any motivation or suggestion to combine the very different references. There is no reason to combine a teaching of polydispersity in an inorganic nanoclay polymer composition with references that only relate to core-shell polymeric nanoparticles. Clearly, the method used in Wang '486 to create nanoclay compositions is not relevant to creating the claimed polydispersity in the nanoparticles of the present claims. In fact, Wang '486 demonstrates that the use of a layered clay material is the very thing that allows controlled molecular weight and thus controlled polydispersity. See Wang '486, col. 14, lines 23-27 (“[L]ayered material Cloisite® 15A [a type of clay] affords a controlled polymerization process, *i.e.*, higher monomer

conversion ... and controlled molecular weight.”). Accordingly, Wang ‘486 is not relevant to Krom or EP ‘142, nor would it enable one of ordinary skill in the art to make the claimed core-shell nanoparticles with the designated polydispersity. Furthermore, as previously argued, there is no reason to combine Krom with either EP ‘142 or Wang ‘486, because Krom discloses a hard core, not a rubbery core (as in EP ‘142), neither Krom nor EP ‘142 discloses or suggests a clay nanoparticle composite, and Krom even teaches away from a polydisperse nanoparticle, stating that the nanoparticles are preferably monodisperse (*See* Krom, column 2, lines 10-15). Accordingly, there is no reason or motivation to combine the references, and there is even teaching away from their combination.

### III. Conclusion

In summary, a prima facie case of obviousness has not been made, and the only evidence of record soundly refutes the Examiner’s allegations about (1) what would occur when additional monomer is added as disclosed in Krom at column 3, lines 16-19 and (2) the effect of combining the references to achieve the claimed polydispersity. Furthermore, the allegations in the Advisory Action that the Declaration is deficient are clearly erroneous. Accordingly, Applicants respectfully request that the rejections be withdrawn and that this case be passed to issue.

Respectfully submitted,

 8/18/08

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